## Environmental Hot Topics

By Karl Czymmek

# Are TMDLs in your future?

Why care about nutrient Total Maximum Daily Loads in the Chesapeake Bay if you don't farm in its watershed? A TMDL may be coming to a watershed near you. Be prepared.

**Some folks say that TMDL stands for Too Many** Darn Lawyers. Certainly, more than a few lawyers had a hand in producing TMDL legislation and developing related rules. Officially, though, the acronym stands for Total Maximum Daily Loads. A TMDL, sometimes called a pollution diet, is set to restrict the amount of pollution being added to a water body.

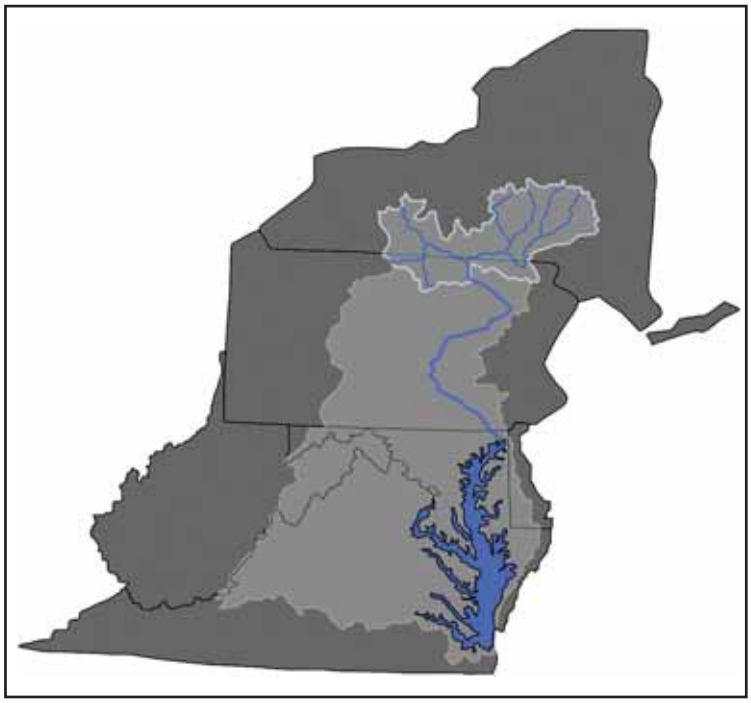
Many farms, including dairies, are located in watersheds that have pollution problems. These problems may not be obvious at the farm border; they may not even be local. But impacts from farming, residences, and commercial and industrial activities can accumulate as water flows downstream. The total impacts can cause dead zones and other damage in important fisheries.

To address this, the Clean Water Act (CWA) requires each state to assess all water bodies to determine if they meet water quality criteria for state-designated use. The criteria are based on a number of measures including water temperature, pH, nutrients, pathogens, turbidity and so on. For example, a trout stream or drinking water reservoir will have different water quality criteria than a stream primarily used for wildlife or irrigation.

Depending on the water uses and the severity of the pollution, states may identify the water as "impaired," meaning it needs work. This could result in the development of a TMDL.

Regulators work with the best available science, including models, to set the diets. They identify the types of pollution sources that need changing and the targets for reductions. This may mean, for example, that sewage treatment plants need to increase the level of treatment to discharge less N or P. It may also mean that farms need to change their practices.

Initially, TMDLs – or the threat of them – tended to focus on smaller bodies of water that typically supplied public drinking water. More recently, larger waters, such as the Chesapeake Bay, came into play.



**The federal government has recognized the Chesapeake Bay as a national treasure. As such there is a renewed effort to restore and protect the estuary and its watershed. Enter TMDL for the watershed.**

### Chesapeake Bay background

On May 12, 2009, President Barack Obama signed an Executive Order that recognizes the Chesapeake Bay as a national treasure and calls on the federal government to lead a renewed effort to restore and protect the nation's largest estuary and its watershed. This order directed the U.S. Environmental Protection Agency (EPA) to use its full authority under the CWA to protect and restore

## FYI

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■ For more information on the 2009 Executive Order regarding the Chesapeake Bay, see this website: http://executiveorder.chesapeakebay.net/EO/file.axd?file=2009%2f8%2fChesapeake+Executive+Order.pdf.

■ For information on the CLEAN EAST program, see this website: https://livestock.rti.org/

the Chesapeake Bay. Enter the TMDL.

Its use in the Chesapeake Bay watershed is necessary, says EPA, because more than 20 years of voluntary efforts haven't restored the Bay to desired levels according to some assessments. Opinions differ on this.

Whether voluntary approaches were working or not, new rules are being developed that will impact many activities in the Chesapeake Bay, including agriculture. It's also true that pollution potential has increased significantly over the last 20 years as more people, pets and farm livestock live in the Bay watershed.

Let's take a closer look at the Chesapeake Bay situation. In the 1970s, it was obvious that the Bay was experiencing rapid decline in clarity and serious reductions in fish, oyster and crab populations, as well as other water quality parameters. Studies indicated that N, P and sediment were major contributors to the problems.

A voluntary partnership involving EPA, the District of Columbia, several states that border the Bay, environmental organizations and research institutions formed the Chesapeake Bay Program. It attempted to get local, state and federal governments to work together to identify issues and develop solutions.

You can imagine the quagmire that resulted as government entities attempted to work together. Not to mention the competing interests of urban, suburban and rural users as well as developers, farmers, fisherman, industry, sewage treatment plant operations and others.

Still, the program reduced nutrient and sediment loadings. But Bay health is far from where many stakeholders want to see it. Thus the Executive Order.

In 2010 EPA required Bay states to submit plans for meeting their expected reductions in nutrient loading to the Bay. Several draft plans were deemed to have serious flaws, with the plans for agriculture often cited as problematic.

In the end, EPA accepted initial plans submitted by each state. But these plans will be revised and strictly adhered to, or EPA will trigger tougher requirements as necessary.

For agriculture, these so called "back stop" provisions could include regulating all Animal Feeding Operations (AFOs) as CAFOs, regardless of size, and mandating manure storage and feed management plans for each herd.

**Should I worry?**

Why care about the Chesapeake Bay situation? Several reasons. Showing the public that we are willing to do something about our environmental impact is increasingly important for agriculture's long-term sustainability. Nutrient and sediment loading to the Bay and other waters, some coming from agriculture upstream, severely impacts local economies and those people who make their living from fishing the Bay. Lastly, a TMDL could be coming to your watershed. There have been discussions of nutrient TMDLs for the Great Lakes and the Mississippi River Basin.

Fortunately, we're learned some lessons from the Chesapeake Bay effort that can help farms in other watersheds. First, voluntary approaches show that trying to do better isn't sufficient. Efforts must deliver real progress, or regulations may be put in place.

Some financial assistance is available. EPA has been providing financial resources to help farms get started through the CLEAN EAST Program. As of this writing, funds were still available for projects, especially for farms in impaired watersheds. Additionally, many states have programs for technical or financial assistance.

All farm managers should continuously evaluate environmental risks at the farmstead and in the fields, especially related to manure and fertilizer management practices. Dairy farms of all sizes need to assess their management – from cropping to feeding livestock – to start or keep working toward better environmental management.

In sports we often hear that the best defense is a good offense. If the dairy industry can continue to play an even stronger offensive game by showing good effort and real progress toward addressing environmental issues, we can make a stronger case for less restrictive regulations. Or maybe we can avoid them altogether.

Regardless, it's worth the effort to work on these issues now. You may earn some time to implement low cost changes that can make money, such as sound nutrient management plans for fields, while planning and saving for more expensive fixes. ▮

## 9 steps to take now

Before you're faced with TDML rules and regulations, here are some things you can do on your dairy to get ahead of the curve:

**1.** Use manure as the primary fertility source and supplement with commercial fertilizer where needed.

**2.** Test manure and soil for nutrient levels. Adjust for proper pH.

**3.** Know nutrient needs of the crop and use manure and fertilizer accordingly.

**4.** Keep good application and yield records.

**5.** Collect and treat barnyard and bunk runoff, silage juice from upright silos and milk house wastewater. It should not flow directly to ditches or streams.

**6.** Build short-term manure storage for those periods of bad weather when you can't daily spread.

**7.** Limit cattle access to streams.

**8.** Assess your dairy ration. How cows are fed dictates the nutrient levels in manure that has to be land applied. Lower nutrient content in manure means fewer nutrients are available to runoff or leach from fields. The best nutritionists are reducing ration P and N levels significantly on well managed dairies without sacrificing milk production.

**9.** Contact the staff of the Soil and Water Conservation District (SWCD), Natural Resources Conservation Service (NRCS), Cooperative Extension or your private sector crop consultant for help to assess risk.